Polyethylene glycol modification of the monoclonal antibody A7 enhances its tumor localization.

Kitamura K, Takahashi T, Takashina K, Yamaguchi T, Noguchi A, Tsurumi H, Toyokuni T, Hakomori S.

First Department of Surgery, Kyoto Prefectural University of Medicine, Japan.

The F(ab')2 fragment of murine monoclonal antibody A7 was covalently bonded to polyethylene glycol (PEG, molecular weight: 5000) and the conjugate was compared to the parent F(ab')2 fragment by in vitro and in vivo studies. PEG-conjugated antibody fragment retained its antigen-binding activity in a competitive radioimmunoassay. The conjugate had a longer half life and showed increased accumulation in tumors. Although the tumor: blood ratio for parent F(ab')2 fragment was higher than that for the conjugate it showed higher value than whole MAb A7. The tissue: blood ratios were kept low with the conjugate, indicating that the conjugate was uptaken to normal organ with lesser extent, as compared with parent F(ab')2 fragment. Our findings indicate that this PEG-conjugated F(ab')2 fragment could be a promising carrier for use in targeting cancer chemotherapy.

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